

207.883.1001



Jacques Whitford Company, Inc.

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Maine • New Hampshire • Massachusetts • Connecticut • Florida • Rhode Island • Pennsylvania • New York • Trinidad • Russia • Argentina • Brunei
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May 12, 2004

Ms. Renee J. Lewis 50 Monument Square, 2nd Floor Portland, Maine 04101

RE:

Proposal for Sampling and Phase I Services
Jacques Whitford Reference: RL Windham/MEP04127

Dear Ms. Lewis:

Jacques Whitford is pleased to provide this scope of work and budget for continued environmental consulting services associated with Depot Street area in Windham, Maine. We are preparing this proposal as a follow-up to our telephone conversations on May 3, and 11, 2004.

During our site walk at the 13 Depot Road property on April 29, 2004, we noted recognized environmental conditions including soil staining, hydraulic lifts potentially containing PCBs, a removed gasoline underground gasoline storage tank, and a floor drain in the garage at the property.

To assess these concerns, we proposed collecting soil samples for laboratory analysis. These included three samples for PCBs, three for volatile organic compounds (VOCs), two for gasoline range organics (GRO) and two for the 8 RCRA metals (total).

We collected samples from testpits excavated on May 7, 2004 and are prepared to submit these samples for analysis as well as collect an additional soil sample for PCBs and two additional samples for metals.

On May 11, 2004, you requested that we add a property (Windham Assessor's Map 38, Lot 8) currently or formerly owned by William & Patricia Dilios to our Phase I. We understand that this is the adjoining lot to the 7 Depot Street property and is currently improved with a mobile home.

Scope of Work

In accordance with our communications, Jacques Whitford proposes the following scope of work:



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Ms. Renee Lewis Windham, Maine Page 2 of 2

- conduct a Phase I ESA of the Dilios lot. We assume that we will use the existing EDR report rather than acquiring a new report for the Dilios property. We will perform a subject property visit, review municipal records and interview regulatory officials, local officials, and personnel associated with the subject property;
- submit two soil samples for PCB analysis, three for VOC analysis, and one for GRO
 analysis to Spectrum Analytical of Agawam, Massachusetts.
- collect and submit an additional sample for PCB analysis and two for analysis of the 8 RCRA metals;
- incorporate the results of soil sampling into our Phase I/II report for 13 Depot Street;
- prepare a letter report documenting the Dilios Phase I ESA.

Project Budget and Schedule

We will complete this work on a time and expenses basis with a not-to-exceed budget of \$2,300 for the proposed work. The actual costs could be me more or less depending on evidence of site contamination, if any. We will not exceed the proposed budget estimate without your approval. The estimate is broken down in the following table:

Task #	Task Title	Budget		
1	Phase I ESA	\$1,200		
2	Sampling and analysis	\$1,100		
	Total	\$2,300		

We have assumed that no Phase II work will be required at the Dilios lot. Should testpitting and/or sampling be required, we will propose it as a separate task.

We are prepared to initiate work upon receipt of written authorization to proceed and complete the Phase I within two weeks.

We will perform our work in accordance with Jacques Whitford's Contract General Conditions, which we have attached. If you are in agreement with the terms of this work scope, please sign one copy and return it to us for our files. Thank you for the opportunity to prepare this proposal. Please call if you have any questions.

Sincerely,

Jacques Whitford

D. Todd Coffin, M.S., C.G.

Senior Environmental Specialist

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JACQUES WHITFORD STANDARD TERMS AND CONDITIONS

The terms and conditions set forth herein (these "Terms and Conditions") have been attached to and are part of a written proposal entitled Proposal for Sampling and Phase I Services (the "Proposal") dated May 12, 2004 and submitted by Jacques Whitford, Inc. ("Jacques Whitford") to Ms. Renee Lewis (the "Client") which Proposal sets forth certain services to be undertaken by Jacques Whitford for the Client (the "Services"). The Proposal (including these Terms and Conditions), when accepted by the Client, shall constitute a binding agreement between the Client and Jacques Whitford. As used herein, the term "Agreement" shall mean the Proposal and these Terms and Conditions, as so accepted. The Client, and Jacques Whitford hereby agree as follows:

1. Services; Payment

Jacques Whitford agrees to perform the Services as set forth in the Proposal, subject to the Terms and Conditions stated herein. Jacques Whitford shall be compensated for the Services in the lump sum amount set forth in the Proposal or in accordance herewith. For time and material charges, labor charge rates will be in accordance with the prevailing Schedule of Fees and will be revised on January 1 of each year. The Client shall designate in writing a person to act as the Client's representative with respect to the Services. Such person shall have complete authority to transmit instructions, receive information, and interpret and define the Client's policies and decisions with respect to the Services.

2. Expenses for Time and Material Charges

- Reimbursable Expenses. Direct non-salary expenses will be billed at cost.
 This will include:
 - Transportation and living expenses incurred for assignments outside of the Jacques Whitford office area, including use of rental cars.
 - FAXs (i.e., outside FAX use in hotel).
 - III. Shipping charges for plans, equipment, etc.
 - IV. Outside reproduction of drawings, reports, and correspondence.
 - Purchase of dedicated special equipment or rental for project use.

Automobile expenses for personal or company vehicles will be charged at \$0.36 per mile plus toll charges, for travel from a Jacques Whitford office to the project and return, and for travel at the job in conduct of work.

- b. <u>Subcontractor Charges</u>. Jacques Whitford prefers that all associated contractors bill directly. However, in the event that subcontracting is chosen, a 10 percent handling fee will be added to the cost for services such as surveying, drilling, heavy equipment operation, laboratory analyses, drafting, typing, and computing services provided by outside contract personnel.
- c. <u>In-House Charges</u>. When appropriate, Jacques Whitford will utilize its inhouse facilities to complete the Services. This includes equipment for performing geophysical, chemical, and hydrogeologic measurements, sampling, etc., general communication equipment (FAX, telephone, Internet, etc.), and equipment/supplies for binding/reproductions. These items will be charged at a unit rate or as a percentage of the labor fees in accordance with the prevailing Schedule of Fees.
- d. <u>Services of Others</u>. On occasion, Jacques Whitford engages the specialized services of individual consultants or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with client approval, and their costs plus a 10 percent service charge must be paid prior to release of the consultant's work, unless otherwise agreed.
- e. <u>Invoices</u>. Invoices will be submitted once a month for services performed and expenses incurred during the previous month. Payment will be due upon receipt. Interest will be added to accounts in arrears net 30 days of invoice date at the rate of one and one-half (1 and 1/2) percent per month (18 percent per annum) or the maximum rate allowed by law, whichever is less, of the outstanding balance. The Client will reimburse Jacques Whitford for all reasonable attorney's fees, court costs, and other costs incurred to effect or ensure collection from the Client. Any payments

received by Jacques Whitford shall be applied to outstanding invoices in whatever order of priority Jacques Whitford deems appropriate.

3. On-Site Services During Project Completion

When Jacques Whitford's Services are provided on the job site, it is understood that the owner and/or contractors other than those retained directly by Jacques Whitford will be solely and completely responsible for working conditions on the job site, including safety of all persons and property during the performance of the work, and compliance with OSHA regulations, and that these requirements will apply continuously and not be limited to normal working hours. Any monitoring of the contractor's performance conducted by Jacques Whitford personnel does not include review of the adequacy of the contractor's safety measures in, on, or near the work site. Additionally, Jacques Whitford takes no responsibility for budgetary or schedule matters associated with the contractor's performance other than for contractors retained directly by Jacques Whitford, nor does Jacques Whitford take any responsibility for the adequacy and reliability of any procedure or analyses performed by the contractor.

4. Access

The Client will furnish Jacques Whitford with access and right of entry onto any premises that are subject of the Proposal, and if such premises are not owned by the Client, the Client represents and warrants that it has full permission to allow Jacques Whitford onto the premises. Such access, right of entry or permission shall be sufficient to enable the performance by Jacques Whitford of the Services. Jacques Whitford will take reasonable precautions to minimize damage to the land from its operations, but Jacques Whitford has not included in its fee the cost of the repair of damage that may result from its operations. If Jacques Whitford is required to restore the land to its former condition, this will be accomplished and the cost will be added to Jacques Whitford's fee.

5. Reliance on Client

The Client shall be obligated to furnish to Jacques Whitford all existing studies, reports and other available data, and work done by the Client or by other contractors retained by the Client pertinent to the Services (such information, materials and work are referred to herein collectively as the "Client Work"). Jacques Whitford shall be entitled to rely upon all such information and work in performing the Services.

During the course of this work, Jacques Whitford may also rely on certain information provided by state and local officials and other parties and on information contained in the files of state and local agencies available to Jacques Whitford at the time of the study (such information is referred to herein as the "Official Information"). Jacques Whitford shall not attempt to independently verify, and shall have no responsibility for, the accuracy, completeness, workmanship or any other aspect of the Official Information and the Client Information, except where explicitly a part of the Proposal.

The Client agrees to indemnify Jacques Whitford, its present and future officers, directors, owners, agents, employees, successors and assigns (an "Indemnitee") from any and all liability, loss or damage which an Indemnitee is legally obligated to pay, including, without limitation, liability, loss or damage arising from bodily injury, illness, death, property damage or any other source and reasonable attorneys' fees and investigative and discovery costs, resulting from or relating to the Client Work and Official Information.

6. Underground Structures

It is the responsibility of the Client to provide Jacques Whitford with assistance in locating underground structures and utilities in the vicinity of any construction, exploration or investigation. If neither party can confirm the location, the Client agrees to accept all liabilities and costs associated with the repair, replacement or restoration of any damage caused by Jacques Whitford or its subcontractor(s) in the performance of the Services. Jacques Whitford shall

also rely upon third party sources in order to determine the existence and location of any underground structures and utilities of any kind. The Client hereby acknowledges that Jacques Whitford may rely on such third party advice, so long as such third party is a reasonable source for such information, without any requirement that Jacques Whitford shall make independent evaluation or investigation of such underground structures and utilities. In the event that the information supplied by third parties is incorrect, the Client acknowledges that Jacques Whitford shall not be responsible for any damage or any consequential damage done to any such subsurface structures or utilities.

7. Compliance with Recommendations

In the course of the performance of the Services, the Client and Jacques Whitford agree that Jacques Whitford may from time to time render advice and make recommendations consistent with its professional judgment relating to any matter relevant to the performance of the Services, which matter may or may not be within the scope of such Services. If the Client fails to abide by any such advice or recommendation, Jacques Whitford shall have the right, in its discretion, either to renegotiate the terms of this Agreement and the scope of its Services or to immediately terminate the Agreement without any further recourse by the Client to Jacques Whitford, in which case the payment provisions of section 17 below shall determine the amounts to be paid for the Services provided by Jacques Whitford to such time of termination.

8. Samples

If it is necessary for the performance of the Services for Jacques Whitford or any subcontractor to take samples of any sort, including, without limitations, samples of soil, rock, or water, such samples shall be the property of Jacques Whitford or such subcontractor, until the costs incurred in collecting and delivering such samples has been remitted to Jacques Whitford or such subcontractor, at which time the samples will be delivered to and become the property of the client.

9. Ownership of Documents

All documents which Jacques Whitford prepares, including, without limitation, drawings, estimates, analyses specifications, field notes, and data (including any copies thereof) and all copyrights relating thereto are and remain the property of Jacques Whitford. The Client may, at its expense, obtain a set of reproducible plans or copies of documents, in consideration of which the Client will use them solely in connection with this project, and only upon receiving the advance (written) approval of Jacques Whitford. Jacques Whitford will retain all pertinent records relating to the Services for a period of two (2) years following submission of a report by Jacques Whitford, during which period the records will be made available to the Client at all reasonable times after full payment of Jacques Whitford fees and expenses and upon obtaining the consent of Jacques Whitford as described above.

10. No Third Party Reliance

All Services are provided solely for the benefit of the Client and not for the benefit of any other party. No party other than the Client shall be entitled to rely on the Services or any information, documents, records, data, interpretations, advice or opinions or other materials given to the Client by Jacques Whitford in the performance of the Services. The Services relate solely to the specific project for which Jacques Whitford has been retained under this Agreement and shall not be used or relied upon by the Client or any third party for any variation or extension of this project, any other project or any other purpose. Any unpermitted use by the Client or any third party shall be at the Client's or such third party's own risk. The Client agrees to indemnify Jacques Whitford, its present and future officers, directors, owners, agents, employees, successors and assigns (an "Indemnitee") from any and all liability, loss or damage which an Indemnitee is legally obligated to pay, including, without limitation, liability, loss or damage arising from bodily injury, illness, death, property damage or any other source and reasonable attorneys' fees and investigative and discovery costs, resulting from or relating to any unpermitted use of the Services or of any information, documents, records, data, interpretations, advice or opinions or other materials given to the Client by Jacques Whitford.

11. Standard of Care; Limitation of Liability

Jacques Whitford agrees to use reasonable care, skill, competence and judgment in the performance of its Services hereunder which are generally consistent with professional standards for scientists and engineers providing similar services at the same time, in the same locale, and under like circumstances.

The Client shall be obligated to promptly report any failure by Jacques Whitford to conform to this warranty in writing to Jacques Whitford within six (6) months after completion of the Services, where upon Jacques Whitford shall at its option, correct such nonconformity or reimburse the Client the price of the nonconforming work provided. This shall constitute the exclusive remedy of the Client under this Agreement. Jacques Whitford and its subcontractor(s) shall in no event be liable to the Client, any successors in interest or any beneficiary or assignee for punitive, consequential, or indirect damages arising out of this Agreement or any breach thereof, whether based upon loss of use or lost profits, revenue or interest, whether or not such loss or damage is based on contract, warranty, negligence, indemnity or otherwise.

12. Disclaimer

THE CLIENT AGREES THAT EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT, Jacques Whitford MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND WHATSOEVER, ORAL OR WRITTEN, EXPRESSED OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

13. Disclosure to Authorities

The Client agrees that in the course of the performance of the Services, Jacques Whitford may come upon matters that Jacques Whitford believes, in its professional judgment, are necessary or advisable to disclose to appropriate authorities under federal, state or local law. The Client agrees that Jacques Whitford shall be entitled to make such disclosure, and Jacques Whitford shall provide the Client with copies of any disclosures so made. Jacques Whitford shall have no liability to the Client or to any other person or entity for making any such disclosures. Jacques Whitford may rely upon the advice of counsel and follow such counsel's advice in determining whether or not to make any such disclosure.

14. Independent Contractor Status

Jacques Whitford is an independent contractor and shall not be regarded as a partner, employee or agent of the Client for any purpose.

15. Unexpected Contingencies

- a) If (i) Jacques Whitford is unable to commence or complete the Services within the time set forth in this Agreement because of any Unexpected Contingency (as defined in subsection (b) below, or (ii) Jacques Whitford's performance of any covenant, agreement, condition or term of the Agreement is prevented, delayed, made impossible or otherwise interfered with by an Unexpected Contingency, then, at Jacques Whitford's option, Jacques Whitford shall either (x) terminate the Agreement and be paid by the Client as provided in section 17 below, (y) renegotiate the Terms and Conditions set forth in the Agreement on a basis satisfactory to Jacques Whitford, or (z) suspend performance during the continuance of any Unexpected Contingency and for a reasonable time thereafter and extend the time for its performance of the Services. Jacques Whitford shall not be liable under any circumstances to the Client for any failure of Jacques Whitford to perform the Services to the extent that such failure is caused in whole or in part by any Unexpected Contingency.
- b) For purposes of this Agreement, an "Unexpected Contingency" shall mean
 (i) any consequence arising out of inaccurate information, advice, or
 instructions provided by the Client or any third party, (ii) strikes, walkouts,
 riots, unavoidable accidents, inclement weather, acts of God or the public
 enemy or unavailability of transportation, (iii) any lawful order issued by
 the United States government or any other federal, state or local

government authority, (iv) any unforeseen or unexpected contingency, the nonoccurrence of which was expressly or impliedly assumed in the Agreement, or (v) any other cause beyond Jacques Whitford's reasonable control.

16. Failure to Pay

If payment of invoices by the Client is not made as required in this Agreement, Jacques Whitford may, at any time and at its option, suspend further work entirely or suspend further work until the Client restores payment to a current basis and, if Jacques Whitford desires, provides advance payments for further Services. In the event Jacques Whitford engages counsel to collect overdue payments, the Client will reimburse Jacques Whitford for all reasonable attorney's fees, court costs and other costs related to collection of overdue payments.

17. Payment on Early Termination of Agreement

If Jacques Whitford or the Client terminates this Agreement prior to the performance in full of Jacques Whitford's Services, the Client shall remain fully liable for, and shall promptly pay Jacques Whitford for, all Services and expenses to the date of termination.

18. Litigation

It is understood that unless expressly implied by the Services outlined in this Agreement that the Services do not include professional services provided by Jacques Whitford for any legal action or suit. Fees for these services will be standard rates time two (2) for court preparation/deposition, preparation/pretrial, conferences/in-court, non-testimony time. Fees for in-court testimony will be three (3) times the standard hourly fees.

19. Performance Time Period

The dates of performance shall be interpreted as a material consideration in this Agreement; however, in no event shall dates be constructed as falling within the meaning of "time is of the essence".

20. Indemnity for Toxic and Hazardous Materials

Jacques Whitford has neither created nor contributed to the creation of any hazardous, radioactive, toxic, pollutant, or otherwise dangerous substance or condition, or asbestos, at the site, and our compensation hereunder is in no way commensurate with the potential risk of injury or loss that may be caused by exposures to such substances or conditions. Further, in seeking our consulting services, you acknowledge that we may not have professional liability or other liability insurance, and may not be able to obtain such insurance at reasonable cost, for claims involving the presence or potential presence of pollutants and asbestos. Consequently, you are requesting us to undertake potentially uninsurable obligations for your benefit. Therefore, to the full extent permitted by law, you agree to indemnify, defend and hold harmless Jacques Whitford and its subcontractors, consultants, agents, officers, directors and employees from and against all claims, damages, losses and expenses, whether direct, indirect, economic, or consequential, including but not limited to fees and charges of attorneys and court and arbitration costs, arising out of, related to, or based upon; a release of pollutants; or bodily injury (including death), property damage or other economic loss, caused by release, removal, remedial action or investigation of pollutants; or removal or investigation of, or remedial action taken because of the release or suspected release of pollutants; or the assessment of fines or penalties related to pollutants; or in any way related to asbestos.

21. General Indemnification

Each party agrees to indemnify the other party, its present and future officers, directors, owners, agents, employees, successors and assigns (an "Indemnitee") from any and all liability, loss or damage which an Indemnitee is legally obligated to pay, including, without limitation, liability, loss or damage arising from bodily injury, illness, death, property damage or any other source and reasonable attorneys' fees and investigative and discovery costs, to the extent

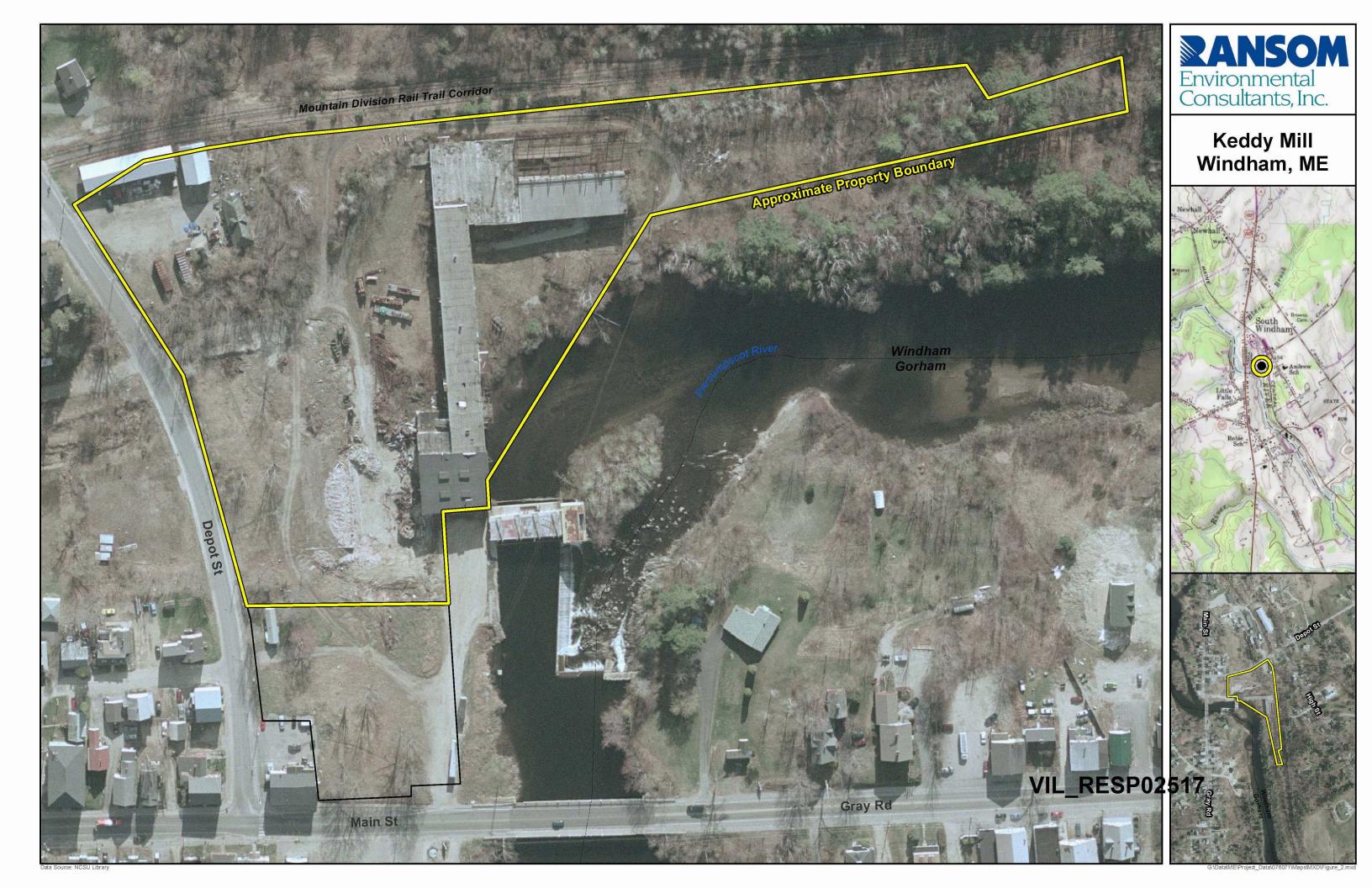
that it is caused by or arises out of the negligence or willful misconduct of the indemnifying party or a breach of this Agreement by the indemnifying party.

22. Miscellaneous

- The headings in this Agreement are for convenience and shall not affect the construction hereof.
- b) This Agreement shall be governed by and interpreted in accordance with the laws of the State of New Hampshire.
- c) This Agreement shall constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements relating to the subject matter hereof and may not be amended except in a writing signed by both parties. The terms of this Agreement shall not be altered or added to by any subsequent terms and conditions proposed by the Client without express written agreement to that effect from Jacques Whitford.
- d) All terms and provisions shall be binding upon and ensure to the benefit of and be enforceable by the parties and their successors and assigns, provided that no party may assign its rights or obligations hereunder without the prior written consent of the other party.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed on the date set forth in the Proposal.

Jacques wintiora:
By: Add Chym
Title: Golagi: t
Date: 5/12/04
By:
Title:
Date:
Client:
By:
Title:
Date:





Civil Engineers & Land Surveyors



June 1, 2007

Project 064006 BG 003

Lee D. Allen, P.E. Northeast Civil Solutions 153 U.S. Route 1 Scarborough, Maine 04074

RE:

Supplemental Geotechnical Investigation

Village at Little Falls, LLC 7 to 13 Depot Street South Windham, Maine

Dear Mr. Allen:

Oak Engineers, LLC (Oak) has completed supplemental geotechnical investigations of the above site in accordance with our proposal for additional geotechnical engineering services dated April 9, 2007, and subsequently authorized on April 19, 2007.

SCOPE OF ADDITIONAL INVESTIGATION

The purpose of these additional investigations is to further define and evaluate the effects of underlying soft organic clay deposits, which were discovered in our previous subsurface investigation and reported on February 27, 2007, on the proposed development. The primary objective is to refine recommendations for deep foundation and pre-loading requirements described in "Area 3" of the previous report.

Subsurface Exploration (Area 3)

Additional subsurface exploration methods consisted of soil test drilling. Eleven test borings (B201 through B211) were advanced with 2½-inch inside diameter (i.d.) hollow-stem steel augers, at the approximate locations indicated on the attached plan included as Attachment A, to a maximum depth of 42 feet below the ground surface (bgs). Soil samples were obtained from each test boring with split-barrel spoon samplers at continuous and nominal 5-foot intervals as directed by Oak's geotechnical engineer. In general, continuous samples were obtained throughout the soft clay deposits. Standard penetration resistance tests were performed and recorded at each sampling interval in accordance with ASTM D 1586 procedures. At soil boring B208, a single undisturbed soil sample was extracted from the underlying soil layers using a thin-walled Shelby tube in according to ASTM D 1587 procedures. One 5-foot NQ rock core sample was collected from test boring B205, from approximately 17 feet to 22 feet bgs. Both the soil and rock samples were returned with the field drilling logs to Oak's office for further analysis and review.

Mr. Lee D. Allen, P.E. Northeast Civil Solutions

Laboratory Testing

Soil samples were visually classified by a geotechnical engineer in general accordance with ASTM D 2487 Unified Soil Classification System (USCS) in Oak's office. The Shelby tube soil sample was transported to a certified soil testing firm's office (Geotesting Express, of Boxboro, Massachusetts) for laboratory analysis and testing. Laboratory testing included consolidated undrained (CU) triaxial compressive strength and vane shear testing. All testing was conducted in accordance with accepted ASTM procedures. Final soil boring logs were prepared by an engineer on the basis of visual classification of soil and rock core samples, laboratory test results, and field drilling logs and are included as Attachment B. A description of geotechnical terms and soil classifications are also included in Attachment C.

Geotechnical Evaluation

The geotechnical engineer evaluated subsurface conditions relative to the proposed development on the basis of field reconnaissance and subsurface exploration, project description, local geology, and laboratory analysis and testing in accordance with generally accepted geotechnical engineering principles and practices. According to our agreement, the geotechnical engineer evaluated subsurface conditions and provided modified recommendations for the following project elements:

- 1. Site preparation
- 2. Building foundations
- Floor slabs
- 4. Construction quality control

SUBSURFACE CONDITIONS

Soil Test Borings

Apparent Subsurface Profiles depicting the proposed construction, existing topography, and interpreted soil profiles were revised and are shown on drawings C2.0 and C2.1 in Attachment A. For the purposes of this supplemental report and the related development, soil test boring results are generally described as follows:

1. Soil samples from supplemental test borings B201 through B211 consisted of fine to medium sand with lesser amounts of fine gravel and silt to approximately 5 to 15 feet bgs. Several samples contained one or more: concrete, coal ash, bricks and organic fibers within these sampling depths. Relative density of the soil samples generally varied from loose to firm. However, in test borings B203, B209, and B210 the soil samples were very loose to approximately 10 feet bgs.

Mr. Lee D. Allen, P.E. Northeast Civil Solutions

- 2. Very soft to soft bluish gray clay was recovered from test borings B204, B207, B208, B209, B210, and B211 and ranging in depths 15 to as deep as 38 feet bgs. Soil samples observed in test borings B201 and B202 at depths ranging from approximately 15 to 30 feet bgs were predominantly stiff mottled clay.
- 3. Test borings spoon or auger refusal was encountered in test borings B201, B202, B204, B207, and B209 and varied in depth from approximately 20 to 40 feet bgs. Test borings B203, B205, and B206 encountered refusal at depths varying from approximately 10 to 17 feet bgs.
- 4. Petroleum odors were noted in the soil samples obtained from test boring B202 from approximately 5 to 30 feet and in test boring B203 at approximately 10 feet bgs.

Rock Core Sampling Results

One rock core sample was collected in boring B205 from approximately 17 to 21 feet bgs. The recovered rock core sample comprised predominantly sandstone and quartz. The medium-gray rock was very hard, moderately fractured, with relatively thin bedding planes inclined at approximately 45 degrees. The rock core recovery ratio was near 100 percent.

A rock quality designation (RQD) was calculated for the retrieved bedrock core specimens. The RQD is used to assess the structural integrity of a rock mass and is defined as the cumulative length of rock core pieces longer than 10 centimeters (cm), divided by the total length of the core run. Based upon the bedrock core obtained in B205, the RQD value was 70 percent.

Ground Water

Damp to saturated soil samples were recovered throughout each of the borings. The soil samples were observed to be wet or saturated from approximately 10 feet bgs to boring termination in most test borings. Soil samples were wet or saturated at approximately 20 feet bgs to boring termination in test borings B202, B204, and B211.

Laboratory Test Results

Results of laboratory testing are summarized below, with supporting laboratory results included as Attachment C.

Table 2: Summary of Soils Consolidation and C-U Triaxial Test Results

Depth	Preconsolidation Pressure (P _c)	Compression Index (C _c)	Recompression Index (C _r)	Initial Void Ratio (e₀)	Vane Shear Strength (S _u) remolded	Coefficient of Consolidation (C _v)
B208, 17–19 ft.	1,000 psf	0.538	0.0448	1.24	40 psf	2.0 x 10 ⁻⁴ in ² /sec

CONCLUSIONS AND RECOMMENDATIONS

The geotechnical engineer interpreted subsurface conditions with respect to the proposed construction on the basis of field exploration, laboratory analysis, and visual classification of soil samples within the designated Area 3 shown in Attachment A. Revised design parameters and construction recommendations are provided below according to an analysis of subsurface conditions disclosed by both the previous and this supplemental investigation and accepted geotechnical engineering principles.

In general, the additional investigations performed confirmed the need for deep pile foundations and preloading soils in a portion of the site. The areas requiring preload and deep foundations are depicted on drawing C3.0 in Attachment A. Due to the highly variable subsurface conditions, careful construction sequencing of the fill and settlement monitoring is recommended.

Subsurface Conditions

In general, the overburden soils consist of very loose to loose silty granular fill soils (SM, GM-SM) containing miscellaneous construction debris consisting of wood, concrete, bricks, coal, ash, and little to trace amounts organics varying in depths of approximately 5 to 20 feet bgs. These deposits overlie the native Presumpscot silty clay deposits which vary in depths from approximately 10 to as much as 40 feet bgs. The strength and compressibility generally decreases with increasing depth. The deep soft clay soils are considered to be of low to moderate strength and high compressibility.

Permanent ground water levels are anticipated to be well below the proposed excavation levels for building foundations and utilities on site. However, the proposed retaining wall adjacent to the on-site power plant will require foundations that extend below groundwater and the adjacent river and dewatering will be required for installation of foundations.

For the purposes of seismic design, the soil profile within the designated Area 3 of the property is *Site Class E* according to *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-02) published by American Society of Civil Engineers (ASCE).

Site Preparation

Site preparation should commence by relocating underground utilities and demolishing all structures within the footprint of the proposed on-site construction. All existing underground utilities located

Mr. Lee D. Allen, P.E. Northeast Civil Solutions

beneath the proposed foundations should be relocated to outside building perimeters. Underground structures beneath the proposed buildings or pavements should be removed to at least 2 feet below proposed foundation and pavement subgrade levels, and 2 feet below finished grades in landscaped areas. The basement area of the existing building should be filled to subgrade level. The surficial soils should then be stripped of all pavements, topsoil, and organics within the proposed building and pavements.

After clearing and stripping the site, subgrades beneath the proposed buildings, pavements, and fill areas should be proof-rolled with several passes of a 15-ton vibratory roller traveling at slow speeds in each perpendicular direction. All weak and unstable subgrades observed by pumping and weaving during proof-rolling or resulting in depressions greater than one-half of an inch after several passes of the roller should be undercut a minimum of 12 inches and backfilled. According to proposed site plans, significant amounts of fill will be required to increase the existing site grades to proposed subgrade level.

Settlement Analysis

Based on the results of this investigation, approximately 5 to 15 feet of fill (average ~ 10 feet) will be required to increase site grades beneath buildings, roads, and parking areas in the areas found to underlain by soft compressible clay and organic soils. Assuming that fill soils are placed in incremental lifts during a period of approximately one month, we estimate that long-term settlements on the order of 6 to 8 inches may occur due to consolidation of the underlying clay soils after completion of the fill. We estimate that these settlements may continue for approximately 6 to 8 months after completion of filling operations.

Pre-load and Settlement Monitoring

In order to accelerate the time to reach estimated total settlements beneath the required fill, we recommend that the areas overlying the soft clay and organics be filled with Structural Fill as previously specified and pre-loaded with additional thickness of fill materials. The proposed limits of pre-loaded area are designated on C3.0 of Attachment A. According to our analysis, the pre-loading program should consist of placing an additional six feet thick soil layer above the proposed finished subgrade levels in the designated areas. We anticipate that the additional pre-load will enable construction of building foundations, pavements and utilities within approximately 2 to 4 months after placement of the pre-load.

In order to minimize the cost of materials, we recommend that the pre-load material be reused as fill in other portions of the Site. Preloading will require a carefully monitored subgrade settlement survey program within the proposed pre-loaded area during and after construction of the fill in order to determine the actual rate of settlement and projected time for settlements to dissipate. The program should be conducted under the supervision of a geotechnical engineer licensed in Maine.

Underground utilities and *final pavements* within the pre-loaded area should be installed outside the building perimeters *only after final site grade elevations are established and settlements have substantially dissipated*. Detailed requirements for placement of fill and backfill are provided in the previous report.